

REMARKS

Claims 1, 3-7, 10-21, 23-27, 30-41, 43-47, 50-66 and 68 are presented for examination.

Claims 1, 21, and 41 have been amended.

Claims 1, 3-7, 10-20

Examiner rejected claims 1, 3-7, 10-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,154,493 issued to Acharya, et al. in view of U.S. Patent No. 4,992,887 issued to Aragaki and further in view of U.S. Patent 6,202,060 issued to Tran.

Claim 1, as amended, recites:

In a digital imaging system, a method for distributed digital image processing, the method comprising:
 recording luminosity information at a first device, for representing an image that has been digitally captured at the first device;
 without performing color interpolation at the first device, generating compressed luminosity information at the first device by applying a wavelet transform compression to individual bit planes that comprise the luminosity information, followed by applying quantization and compression to the luminosity information;
 packaging said compressed luminosity information with header information identifying the individual bit planes;
 transmitting said compressed luminosity information to a second device in a wireless manner using a packet-based communication protocol;
 restoring said luminosity information from said compressed luminosity information at the second device; and
 converting said luminosity information at the second device into a color image, including performing color interpolation at the second device.

(Emphasis Added). Applicant respectfully submits that Acharya, Aragaki and Tran, either individually or in combination do not teach or suggest header information identifying the individual bit planes.

The Examiner agrees with the Applicant's contention that Acharya does not teach or suggest a header identifying the individual bit plane data comprising the compressed luminosity information. (Office Action, page 5, lines 3-4).

The Examiner however states that Aragaki's "file header includes size of reduced image LRX, LRY, which includes compressed image data in serial order of bit planes." (Office Action, page 5, lines 7-9). Therefore, the Examiner argues, that "it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the device in Acharya ('493) by the teaching in order to store a file header in the image data" and that doing so "saves times in searching and retrieving image data." (Office Action, page 5, lines 9-12).

Applicant respectfully disagrees. As shown in Figure 4A, Aragaki discloses that an image file includes a file header. Figure 4A further shows that separately from the file header, the image file includes reduced and compressed image data in serial order of bit planes. (See also, col. 8, lines 53-59). The file header merely includes identification data identifying the image file (such as file name, file number, image size and filing date), a value (LRX) expressing the size of a reduced-and-compressed image in a main scanning direction, a value (LRY) expressing the size of a reduced-and-compressed image in a sub-scanning direction, and a value (LRX+LRY) indicating the total amount of the reduced-and-compressed image data. (Aragaki, Figure 4B; col. 4, lines 18-22; col. 7, lines 57-67 to col. 8, lines 1-9). Thus, Aragaki's file header merely includes identification data and two data values indicating image size and amount of data, and does not include individual bit plane data. Rather, the bit plane data is shown to be included in the reduced-and-compressed image data and not in the file header. (Figures 4A, 9A, 9B). Thus, Aragaki does not teach or suggest header information identifying the individual bit planes as recited in claim 1.

Tran discusses a data management system, including a portable computer. Tran does not teach or suggest packaging compressed luminosity information with header information identifying the individual bit plane.

Furthermore, the Applicant objects to the combination of Acharya, Aragaki, and Tran. The Office Action has provided inadequate motivation to combine the cited references under 35 USC § 103. The motivational reason given to combine Acharya and Aragaki was that the combination “saves times in searching and retrieving image data.” (Office Action, page 5, lines 9-12). The office action cites no hints or suggestions in either reference that actually suggests the combination of these two references. The applicant requests a specific citing of facts to establish a prima facie case of obviousness by a preponderance of the evidence under 35 USC § 103.

Therefore, claim 1, and claims 3-7, 10-20 that depend from it, are not obvious over Acharya, Aragaki, and Tran.

Claims 21, 23-27, 30-40

Examiner rejected claims 21, 23-27, 30-40 under 35 U.S.C. §103(a) as being unpatentable over Acharya in view of Aragaki and further in view of Tran.

Claim 21, as amended, recites:

In a digital imaging system, a method for deferring digital image processing, the method comprising:
recording sensor information from an image sensor at a first device, for representing an image that has been recorded at the image sensor of the first device;
compressing said sensor information prior to color processing by applying a transformation compression to individual bit planes that comprise the sensor information, for generating compressed sensor information at the first device;
packaging said compressed sensor information with header information identifying the individual bit planes;

without having performed color processing at the first device, transmitting said compressed sensor information to a second device in a wireless manner using a packet-based communication protocol; and
decompressing said compressed sensor information at the second device, whereupon said sensor information may thereafter be processed into a color image.

(Emphasis Added). As discussed earlier, none of Acharya, Aragaki and Tran teaches or suggests header information identifying the individual bit planes. Therefore, Applicants respectfully submit that claim 21, and claims 23-27, 30-40 that depend from it, are not obvious over the cited combination.

Claims 41, 43-47, 50-68

Examiner rejected claims 41, 43-47, 50-68 under 35 U.S.C. §103(a) as being unpatentable over Acharya, et al. in view of Tran.

Claim 41, as amended, recites:

An imaging system providing deferred image processing, the system comprising:
an imager having a sensor for recording luminosity information for a visual image captured by the imager, said luminosity information comprising luminosity values recorded by the sensor;
a compressor module for compressing said luminosity information by applying a transformation compression to all individual bit planes that comprise only the luminosity information, for generating compressed luminosity information at the imager without having performed color processing;
a wireless communication link for transmitting said compressed luminosity information to a target device in a wireless manner using a packet-based communication protocol; and
a decompression module for decompressing said compressed luminosity information at the target device, whereupon said sensor information may thereafter be processed into a color image.

(Emphasis Added). Acharya and Tran, either individually or in combination, do not teach or suggest applying a transformation compression to all individual bit planes that comprise only the luminosity information, for generating compressed luminosity information at the imager

without having performed color processing.

Rather, Acharya discloses compressing all the color components (Y, M, C and K) of the reduced image data. (Acharya, col. 6, line 39 to col. 7, line 14). Thus, Acharya does not teach or suggest applying transformation compression to all individual bit planes that comprise only the luminosity information, as claimed.

Tran discusses a data management system that stores data conveniently for a user. Tran does not teach or suggest applying transformation compression to all individual bit planes that comprise the luminosity information.

Therefore, claim 41, and claims 43-47, 50-68, which depend on it, are not obvious over Acharya and Tran.

SUMMARY

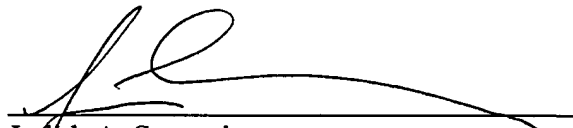
In view of the foregoing amendments and remarks, Applicants respectfully submit that all pending claims are in condition for allowance. Such allowance is respectfully requested.

If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to contact Judith A. Szepesi at (408) 720-8598.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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